

BOSS

RV-1000

DIGITAL REVERB

SERVICE NOTES

First Edition

SPECIFICATIONS

The RV-1000 is a 1U rack-mount stereo Digital Reverb unit use fully digital delay systems.

Input Level/Input Impedance: (Nominal)  
-20dBm/ 1Mohm (UNIGAIN at -20dBm)  
+ 4dBm/40Kohm (UNIGAIN at + 4dBm)  
Output Level/Output Impedance: (Nominal)  
-20dBm/1.5Kohm (UNIGAIN at -20dBm)  
+ 4dBm/5.7Kohm (UNIGAIN at + 4dBm)

Output Load Impedance: More than 10kohm  
Frequency Responce:  
Direct ..... 10Hz to 30KHz (±1dB)  
Effect ..... 30Hz to 10KHz (+1, -3dB)

Sampling Process:  
Sampling Resolution ... 16-bit Linear Response  
Sampling Rate ..... 31.25KHz

PRE EQ:  
LOW ..... ±15dB at 100 Hz  
HIGH ..... ±15dB at 10 KHz

Residual Noise:  
Less than -92dBm (IHF-A)  
BYPASS at OFF, UNIGAIN at -20dBm, INPUT at 10 (FCW),  
OUTPUT (DIRECT, EFFECT) at 10 (FCW),  
PRE EQ (LOW,HIGH) at center, MODE at SMALL ROOM 1,  
DECAY TIME/GATE TIME at S (FCCW)

Power Consumption: 6.5W  
Dimensions: 482(W) x 44(H) x 208(D) mm  
19" x 1-13/16" x 8-1/4"  
Weight: 2.5kg  
5 lb. 9 oz.

Accessories (Standard):  
Owner's Manual (English) (G6027102RT)  
Owner's Manual (Japanese)(G6027101RT)

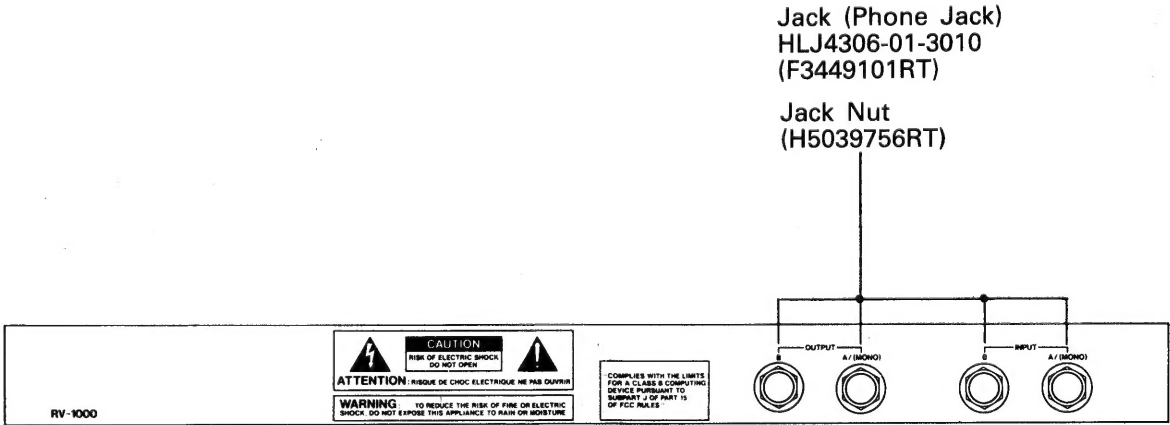
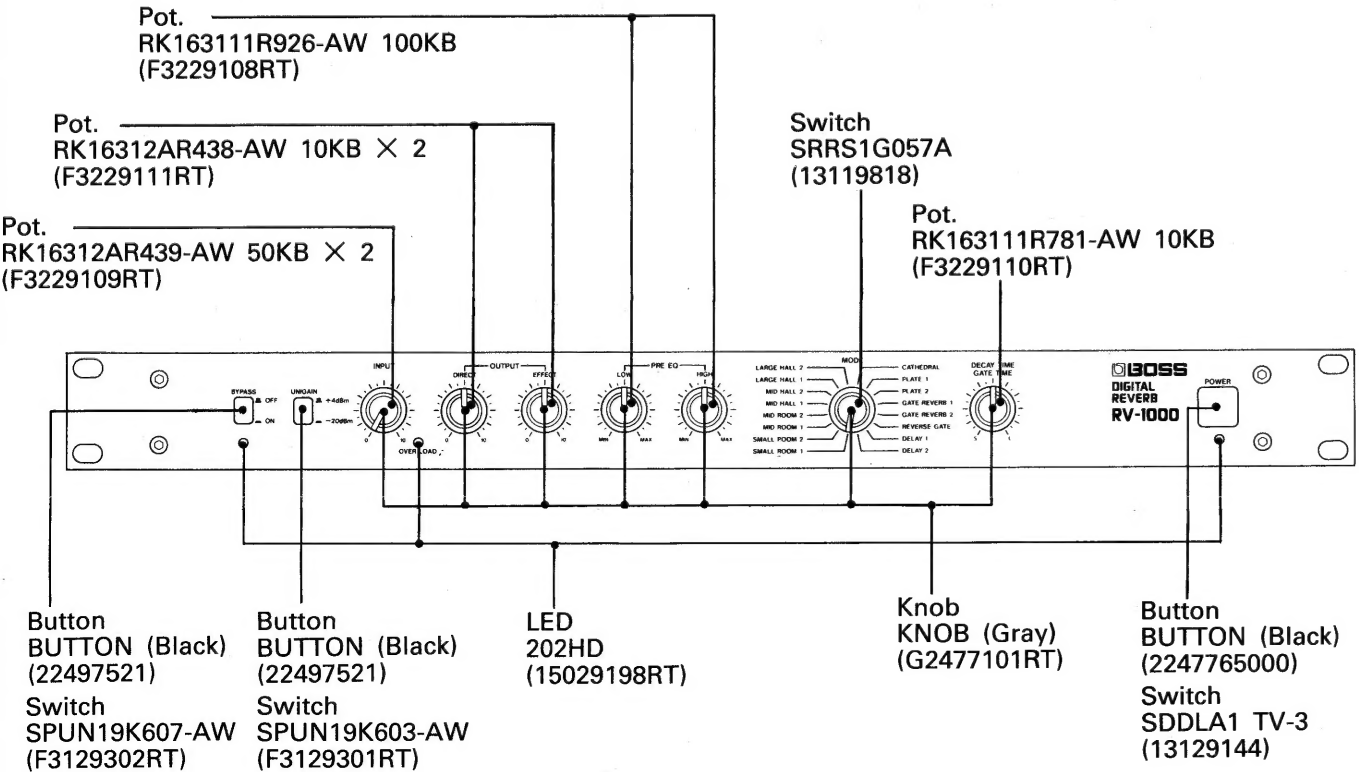
- NOTES:
- 0dBm is referenced to 0.775Vrms.
  - Effect devices generally operate at one of two nominal line levels. high (+4dBm) or medium (-20dBm), and so UNIGAIN switch allows you to select either a medium level input (swich "in"), or a high level input (switch "out").
  - INPUT controls permit input gain to be adjusted from -∞dB (at 0) to 0dB (at 10), and so it enables the unit to function properly with a wide range of input levels.
  - Nominal level is level enable you to obtain the best noise and distortion performance.
  - Overload indicator light up at about 3dB under signal clipping.
  - Sampling process is being used as digital technology to modify the sound.
  - With 16-bits sample, enable to distinguish 65,536 (=2exp16) different amplitude levels, and this allows a number of steps that is matched to the amplitude range of 96dB (65,000: 1).
  - With 31.25KHz sample, allows a maximum frequency content of just over 15KHz in the wave that is being sampled.

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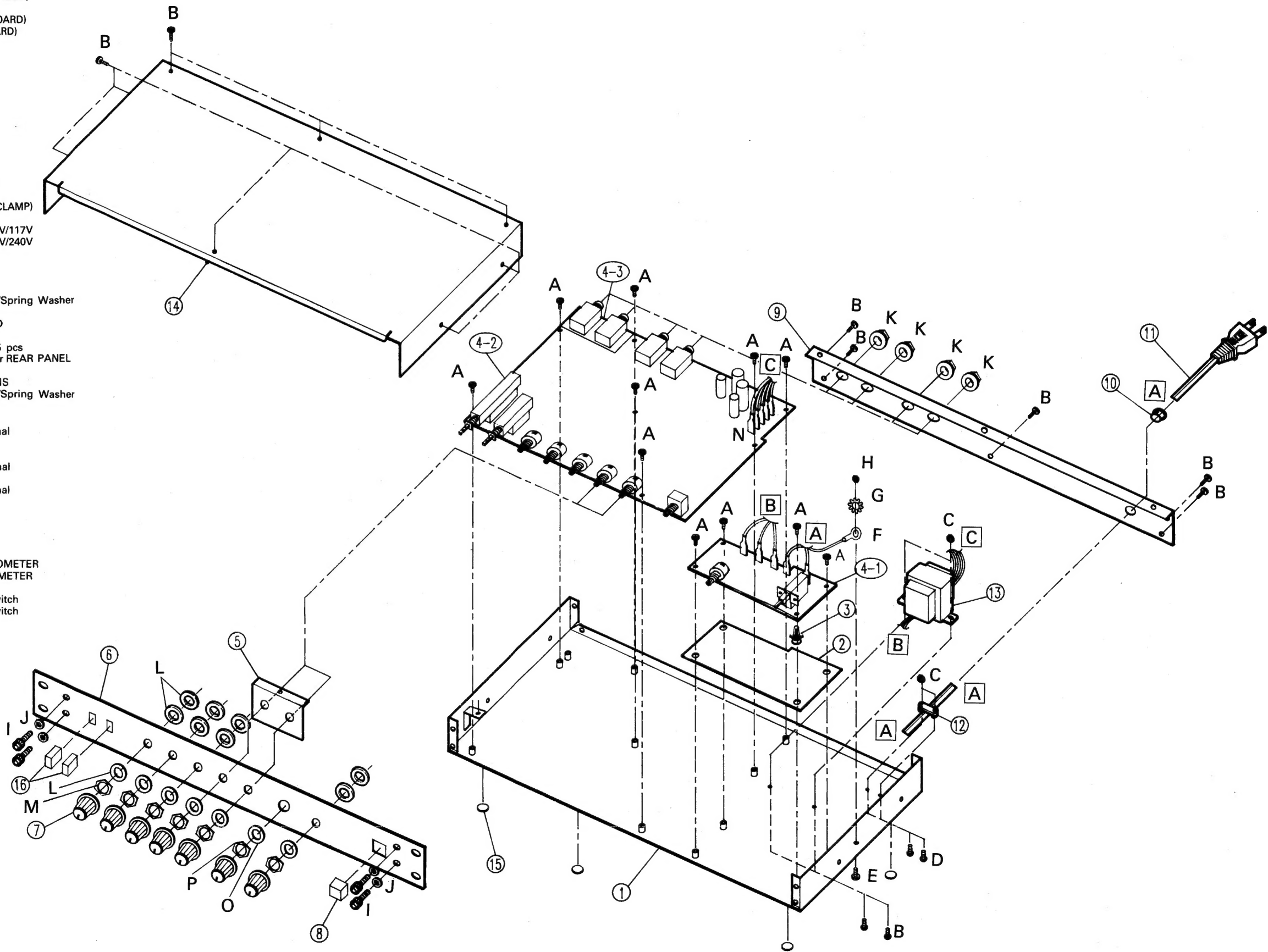
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GENERAL VIEW  
RV-1000 の概観図



EXPLODED VIEW/分解図

NO.	PARTS NO.	PARTS NAME AND DESCRIPTION
1.	F2029102RT	BOTTOM COVER (CHASSIS)
2.△	H2369601RT	INSULATE (INSULATION SHEET OF FIBER)
3.	F2199101RT	PCB JOINT
4-1.	7572230000	BOARD ASSY (MAIN BOARD 3/3 or POWER BOARD)
4-2.	7572230000	BOARD ASSY (MAIN BOARD 1/3 or MAIN BOARD)
* See PARTS LIST for details of BOARD ASSY		
5.	F2129501RT	TOP ANGLE (TOP COVER HOLDER)
6.	F2219101RT	FRONT PANEL
7.	G2477101RT	KNOB (Gray)
8.	2247765000	BUTTON (Black)
9.	F2219102RT	REAR PANEL
10.△	F2369402RT	SB-0710 CORD BUSHING
11.	AC CORD (Installed)	
△	G3497103RT	LP-50 with Plug for 100V use
△	G3497102RT	SVT LP-30 with Plug for 117V use
△	G3497101RT	LP-21 with Plug for 220V use
△	G3497104RT	LP-23 with Plug for 240VA use
△	G3497105RT	5722-660-4527 with Plug for 240VE use
12.△	12369410RT (or 12369410)	STRAIN RELIEF 1702B (CORD BAND or CORD CLAMP)
13.	Power Transformer	
△	G2457101RT	100V/117V Power Transformer for 100V/117V
△	G2457102RT	220V/240V Power Transformer for 220V/240V
14.	F2029101RT	TOP COVER
15.	F2359101RT	FOOT (RUBBER FOOT)
16.	2249752100	BUTTON (Black)
A.	*****	3x6 Round Head Machine Screw Fe Cm W/Spring Washer Total 11 pcs
B.	*****	7 for MAIN BOARD, 4 for POWER BOARD 3x8 Binding Head Machine Screw Fe BC W/Internal Tooth Washer Total 15 pcs
C.	45039502RT	2 for POWER TRANS, 8 for TOP COVER, 5 for REAR PANEL M3 Hex Flange Nut Fe Cm Total 4 pcs
D.	*****	2 for STRAIN RELIEF, 2 for POWER TRANS 3x16 Round Head Machine Screw Fe BC W/Spring Washer
E.	*****	2 pcs for STRAIN RELIEF 4x8 Binding Head Machine Screw Fe BC
F.	4503970200	1 pc for Ground B-6 Lug Terminal B-6 PIN (LUG TERMINAL)
G.	*****	M4 External Tooth Washer Fe Cm 1 pc for Ground B-6 Lug Terminal
H.	*****	M4 Hex Nut Fe Cm 1 pc for Ground B-6 Lug Terminal
I.	H5029806RT	4x10 Hex Socket Cap Screw Fe BC 4 pcs for FRONT PANEL
J.	*****	M4x0.45 Internal Tooth Washer Fe BC 4 pcs for FRONT PANEL
K.	H5039756RT	Jack Nut 4 pcs for JACK
L.	*****	V.R. Accessory (Washer) 14 pcs for POTENTIOMETER
M.	*****	V.R. Accessory (Nut) 6 pcs for POTENTIOMETER
N.	H5039701RT	1741 BS-2 PIN (QUICK SLIDE TERMINAL)
O.	*****	SW. Accessory (Washer) 1 pc for MODE switch
P.	*****	SW. Accessory (Nut) 1 pc for MODE switch



PARTS LIST

**SAFETY PRECAUTIONS:**

The parts marked  $\triangle$  have safety-related characteristics. Use only listed parts for replacement.

安全上の注意：  
 $\triangle$ が付いている部品は、安全上特別な規格でつくられたものです。交換の際は、指定された部品番号以外の部品は使わないようにして下さい。

**CONSIDERATIONS ON PARTS ORDERING**

When ordering any parts listed in the parts list, please specify the following items in the order sheet.

	QTY	PART NUMBER	DESCRIPTION	MODEL NUMBER
Ex.	10	22575241	Sharp Key	C-20/50
	15	2247017300	Knob (orange)	DAC-15D

Failure to completely fill the above items with correct number and description will result in delayed or even undelivered replacement.

パーツ発注に関するお願い  
オーダーシートには、必ず下記の4項目は正確に記入して下さい。(例外は除く)

	必要数	パーツナンバー	品名	使用機種
例)	10	22575241	Sharp Key	C-20/50
	15	2247017300	Knob (orange)	DAC-15D

もし記入漏れ、誤記等有る場合、必要部品が発送出来なかったり、大幅な遅れの原因になります。御協力をお願いします。

CASING ケース

F2029101RT	TOP COVER	
F2029102RT	BOTTOM COVER	(CHASSIS)
F2219101RT	FRONT PANEL	
F2219102RT	REAR PANEL	
F2129501RT	TOP ANGLE	(TOP COVER HOLDER)

KNOB, BUTTON つまみ, ぼたん

G2477101RT	KNOB (Gray)	INPUT, OUTPUT(DIRECT, EFFECT) PRE EQ (LOW, HIGH), MODE, DECAY
2247765000	BUTTON (Black)	POWER
2249752100	BUTTON (Black)	BYPASS, UNIGAIN

SWITCH スイッチ

$\triangle$ 13129144	SDDLA1 TV-3	(SDDLA1039A TV-3)	POWER	SW4
13119818	SRRS1G057A	(SRRS1G Digital Sw)	MODE	SW3
F3129301RT	SPUN19K603-AW		UNIGAIN	SW2
F3129302RT	SPUN19K607-AW		BYPASS	SW1

JACK, SOCKET ジャック, ソケット

F3449101RT	HLJ4306-01-3010	Phone Jack	INPUT A/B, OUTPUT A/B	JK1-4
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PCB ASSY 基板組立

7572230000	RV1000 BOARD ASSY	(pcb G2927101RT)	This ASSY includes the following. この基板組立には、次のものが含まれています。	
*****	MAIN BOARD 1/3	(MAIN BOARD)	(pcb G2927101RT 1/3)	
*****	MAIN BOARD 3/3	(POWER BOARD)	(pcb G2927101RT 3/3)	

IC 集積回路

15189136RT	(or 15189136) M5218L	Low Noise Dual OP Amp	(Mitsubishi) IC1, 2, 4, 5
15189188	M5238L	Low Noise JFET Dual OP Amp	(Mitsubishi) IC8
15159129HO	HD14053BP	Triple 2-Channel Multiplexer	(CMOS) (Hitachi)IC7
15189111RT	(or 15189111J1) NJM311D	Precision Voltage Comparator	(JRC) IC6
15189196	uPC339C	Quad Comparator	(NEC) IC13
$\triangle$ 15199212	TA7805S	+ 5V Voltage Regulator	(Toshiba) IC19
$\triangle$ 15199147	M5F7815L-01	+ 15V Voltage Regulator	(Mitsubishi) IC21
$\triangle$ 15199148	M5F7915L-01	- 15V Voltage Regulator	(Mitsubishi) IC20
15179394	MN4264-12	120nS 64K (16Kx4) nMOS D-RAM	(Panasonic) IC15, 16, 17, 18
F5219102RT	NMC27C128BN	150nS 128K (16Kx8) CMOS OTP-ROM	(NS )IC10
15239152	HG62E22R64FS	Gate Array (DSP Chip)	IC14
15219162	PCM54HP-V	16-Bit D/A Converter	(BB) IC9

TRANSISTOR トランジスター

15129115RT	(or 15129114) 2SC1815-GR	Tr for AF amp (Toshiba)	Q4, 10, 11, 12, 13, 15, 17, 20
15119113RT	(or 15119113) 2SA1015-GR	Tr for AF amp (Toshiba)	Q3, 5, 16, 19
15129136RT	(or 15129136) 2SC2878-A	Tr for Muting Sw. (Toshiba)	Q1, 2
15139107RT	(or 15139107) 2SK117-Y	FET for Low Noise Buff. (Toshiba)	Q6, 7, 8, 9, 18, 21
15139101RT	(or 15139101) 2SK30A-Y	FET for Limiter Sw. (Toshiba)	Q14

DIODE ダイオード

$\triangle$ 15039111RT	PB154M	Bridge Rectifier	for + 5V	D20
15019420	RD 3.0ESB2-T	Zener	for limiter circ.	D5
$\triangle$ 15019209RT	1N4004	Rectifier	for + 15V and - 15V	D21 - D24
15019125	1SS-133			

POTENTIOMETER 可変抵抗器

F3229109RT	RK16312AR439-AW	50KB x 2	INPUT	VR1
F3229108RT	RK163111R926-AW	100KB	PRE EQ (LOW, HIGH)	VR4, 5
F3229110RT	RK163111R781-AW	10KB	DECAY	VR9
F3229111RT	RK16312AR438-AW	10KB x 2	OUTPUT (DIRECT, EFFECT)	VR2, 3
F3299101RT	EVND8803B15	100KB Trimmer Pot.	for A/D Offset Adj.	VR7
F3299102RT	EVND8AA03B53	5KB Trimmer Pot.	for Decay Time Adj.	VR8

CAPACITOR   コンデンサー

△13639194RT	SKR102MIVJ25	1000/35 Electrolytic for + 15V and - 15V	C127, 130
△13639154RT	SKR102M1CG20	1000/16 Electrolytic for + 5V	C125

INDUCTOR, COIL   インダクタ, コイル

△22445240	(or 12389716) BL02RN2-R62	Coil (EMI FIL) for EMI Filtering	L1-L5
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CRYSTAL, RESONATOR   クリスタル, 発振子

12389716M1	(or 12389716) CSA-8.00MS1	Ceramic Resonator	
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OPTICAL DEVICE   光関連部品

15029198RT	202HD	LED for Power, Bypass and Overload Indi.	D1, 3, 25
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WIRING, CABLE   ワイヤリング, ケーブル

*****	WIRING A	1 conductor HOOK-UP WIRE	(JUMPER LEAD)
*****	WIRING B	1 conductor HOOK-UP WIRE	(JUMPER LEAD)
*****	WIRING I	2 conductors SHIELDED CABLE	(JUMPER LEAD)
*****	WIRING L	1 conductor HOOK-UP WIRE on PCB soldering side	(JUMPER LEAD)

TRANSFORMER   トランス

△G2457101RT	100V/117V	Power Transformer for 100V/117V	T1
△G2457102RT	220V/240V	Power Transformer for 220V/240V	T1

AC CORD (Installed)   電源コード   (据え付け式)

△G3497103RT	LP-50	with Plug for 100V use	(2-CONDUCTOR)
△G3497102RT	SVT LP-30	with Plug for 117V use	(3-CONDUCTOR)
△G3497101RT	LP-21	with Plug for 220V use	(2-CONDUCTOR)
△G3497104RT	LP-23	with Plug for 240VA use	(3-CONDUCTOR)
△G3497105RT	5722-660-4527	with Plug for 240VE use	(3-CONDUCTOR)

SCREW   ねじ類

*****	3x6 Round Head Machine Screw Fe Cm W/Spring Washer	11 pcs
	7 for MAIN BOARD, 4 for POWER BOARD	
*****	3x8 Binding Head Machine Screw Fe BC W/Internal Tooth Washer	15 pcs
	2 for POWER TRANS, 8 for TOP COVER, 5 for REAR PANEL	
*****	3x16 Round Head Machine Screw Fe BC W/Spring Washer	2 pcs for STRAIN RELIEF
*****	4x8 Binding Head Machine Screw Fe BC	1 for Ground B-6 Lug Terminal
H5029806RT	4x10 Hex Socket Cap Screw Fe BC	4 pcs for FRONT PANEL
45039502RT	M3 Hex Flange Nut Fe Cm	4 pcs
	2 for STRAIN RELIEF, 2 for POWER TRANS	
*****	M4 Hex Nut Fe Cm	1 for Ground B-6 Lug Terminal
*****	M4 External Tooth Washer Fe Cm	1 for Ground B-6 Lug Terminal
*****	M4x0.45 Internal Tooth Washer Fe BC	4 pcs for FRONT PANEL
H5039756RT	Jack Nut	4 pcs for JACK
*****	V.R. Accessory (Washer)	14 pcs for POTENTIOMETER
*****	V.R. Accessory (Nut)	6 pcs for POTENTIOMETER
*****	SW. Accessory (Washer)	1 for MODE SWITCH
*****	SW. Accessory (Nut)	1 for MODE SWITCH

MISCELLANEOUS   その他

△12369410RT	(or 12369410) STRAIN RELIEF 1702B	(CORD BAND or CORD CLAMP)
△H5039701RT	1741BS-2 PIN	(QUICK SLIDE TERMINAL)
△H2369601RT	INSULATE	(INSULATION SHEET OF FIBER)
△F2369402RT	SB-0710	CORD BUSHING
F2359101RT	FOOT	(RUBBER FOOT)
F2199101RT	PCB JOINT	
4503970200	B-6 PIN	(LUG TERMINAL)

ACCESSORIES (STANDARD)   標準付属品

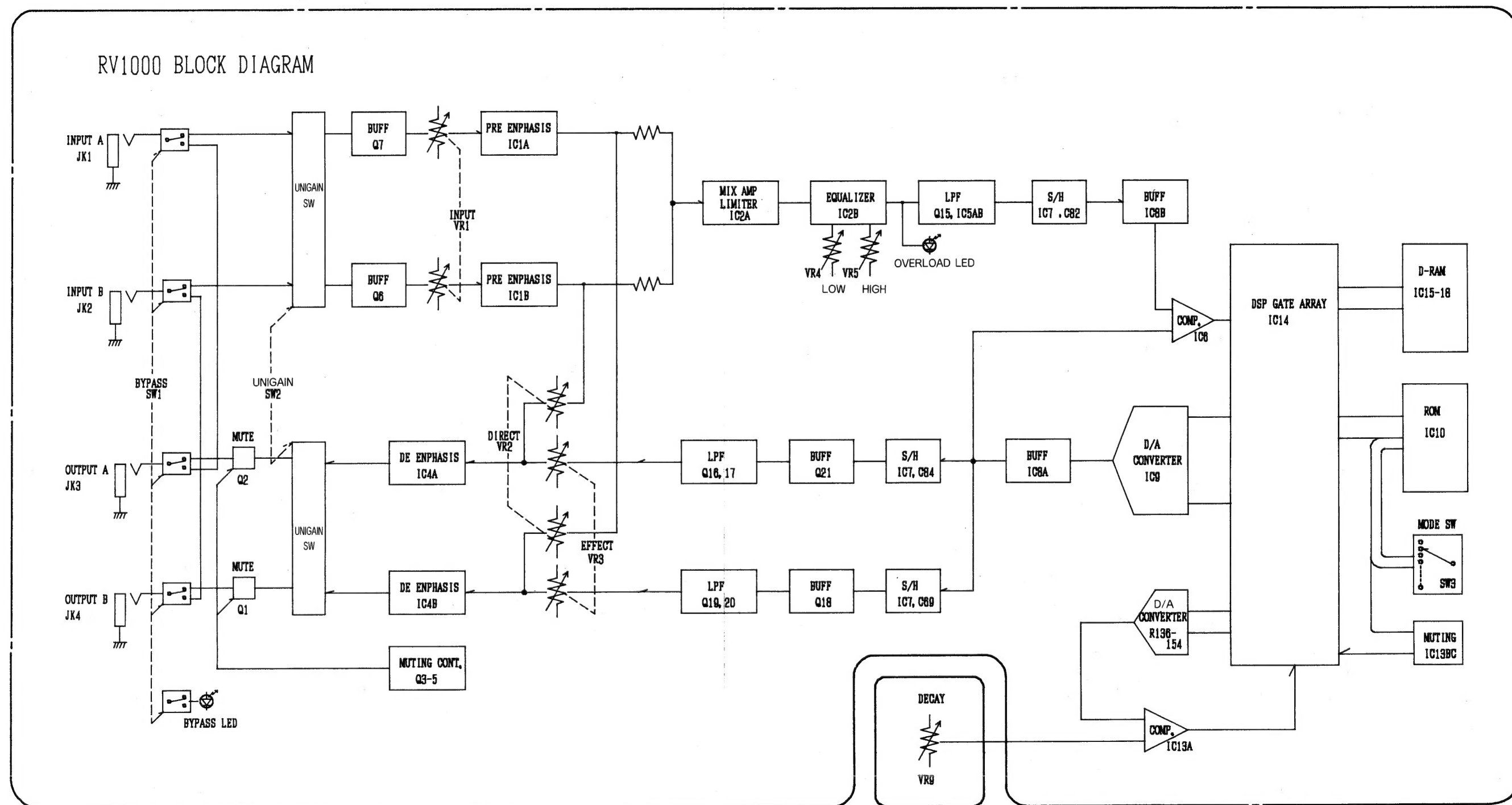
G6027101RT	OWNER'S MANUAL	(Japanese)
G6027102RT	OWNER'S MANUAL	(English)

NOTES: On mechanical characteristics , connection diagram and the purpose of using, HG62E22R64FS (15239152) is same as HG61H20R36F be used on MT-32 「MULTI TIMBRE SOUND MODULE」 or RV-2 「DIGITAL REVERB」. But electrical characteristics is difference in part, so there is incompatibility.

注： Gate Array HG62E22R64FS (15239152) は、MT-32 「MULTI TIMBRE SOUND MODULE」, RV-2 「DIGITAL REVERB」等で使用している reverb chip HG61H20R36F (15229863) と、形状および端子配置そして使用目的は同じです。しかし、一部特性が変更されていますので互換は出来ません。

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30

A **BLOCK DIAGRAM**





1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30

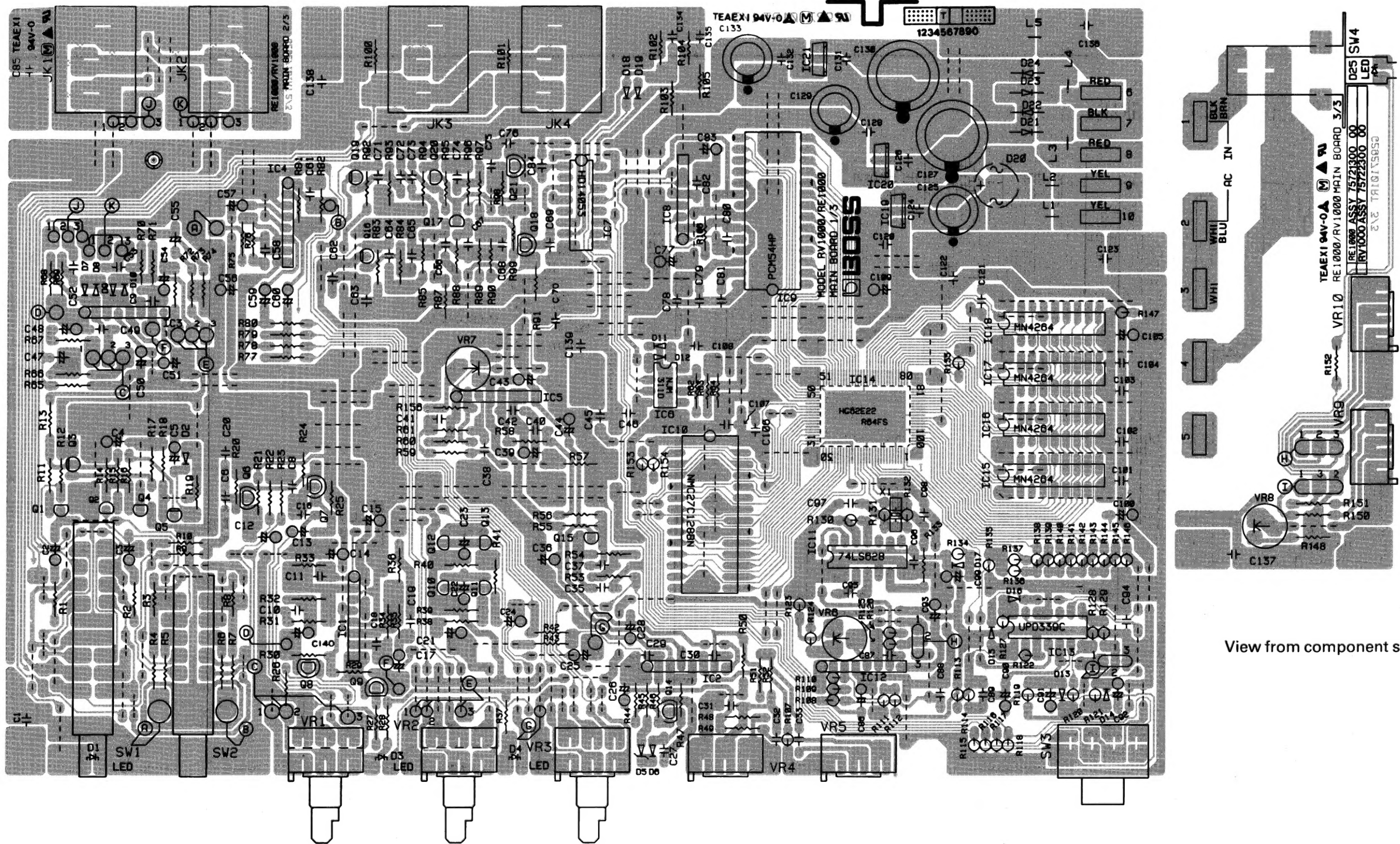
A  
B  
C  
D  
E  
F  
G  
H  
I  
J  
K  
L  
M  
N  
O  
P  
Q  
R  
S  
T  
U

**RV1000 BOARD ASSY**

ASSY 7572230000  
(pcb G2927101RT)

**MAIN BOARD 1/3 (MAIN BOARD)**  
(pcb G2927101GT 1/3)

**MAIN BOARD 3/3 (POWER BOARD)**  
(pcb G2927101RT 3/3)



- NOTES: 1. Replacement RV1000 BOARD ASSY includes MAIN BOARD 1/3(MAIN BOARD) and MAIN BOARD 3/3(POWER BOARD).
2. The PCB(pcb G2927101RT) use in RV1000 BOARD ASSY is used in RE1000 BOARD ASSY too.  
So there are some space do not lay some parts in BOARD ASSY .  
That space must be used by RE1000 BOARD ASSY .
3. The alphabet of A and B means connecting point of WIRING A and B for jumper lead.
4. In RV1000 BOARD ASSY, there are some surface (foil side) mountings and a pattern cut.  
For details, refer to the SURFACE MOUNTING DIAGRAM FOR BOARD ASSY (P.9).

- 注： 1. 補修用 RV1000 BOARD ASSY(基板組立)は、MAIN BOARD 1/3(MAIN BOARD) と MAIN BOARD 3/3 (POWER BOARD) を含みます。
2. RV1000 BOARD ASSY で使う基板 (pcb G2927101RT) は、RE1000 BOARD ASSY でも使用されます。その為、BOARD ASSY 上に、部品の付いていない場所があります。そこは、RE1000 BOARD ASSY で使われます。
3. A と B の文字は、ジャンパー線の WIRING A と B の接続点を表わしています。
4. RV1000 BOARD ASSY には、裏付け部品とパターン・カットがあります。  
詳細については、基板組立の裏付け説明図 (P.9) を参照して下さい。

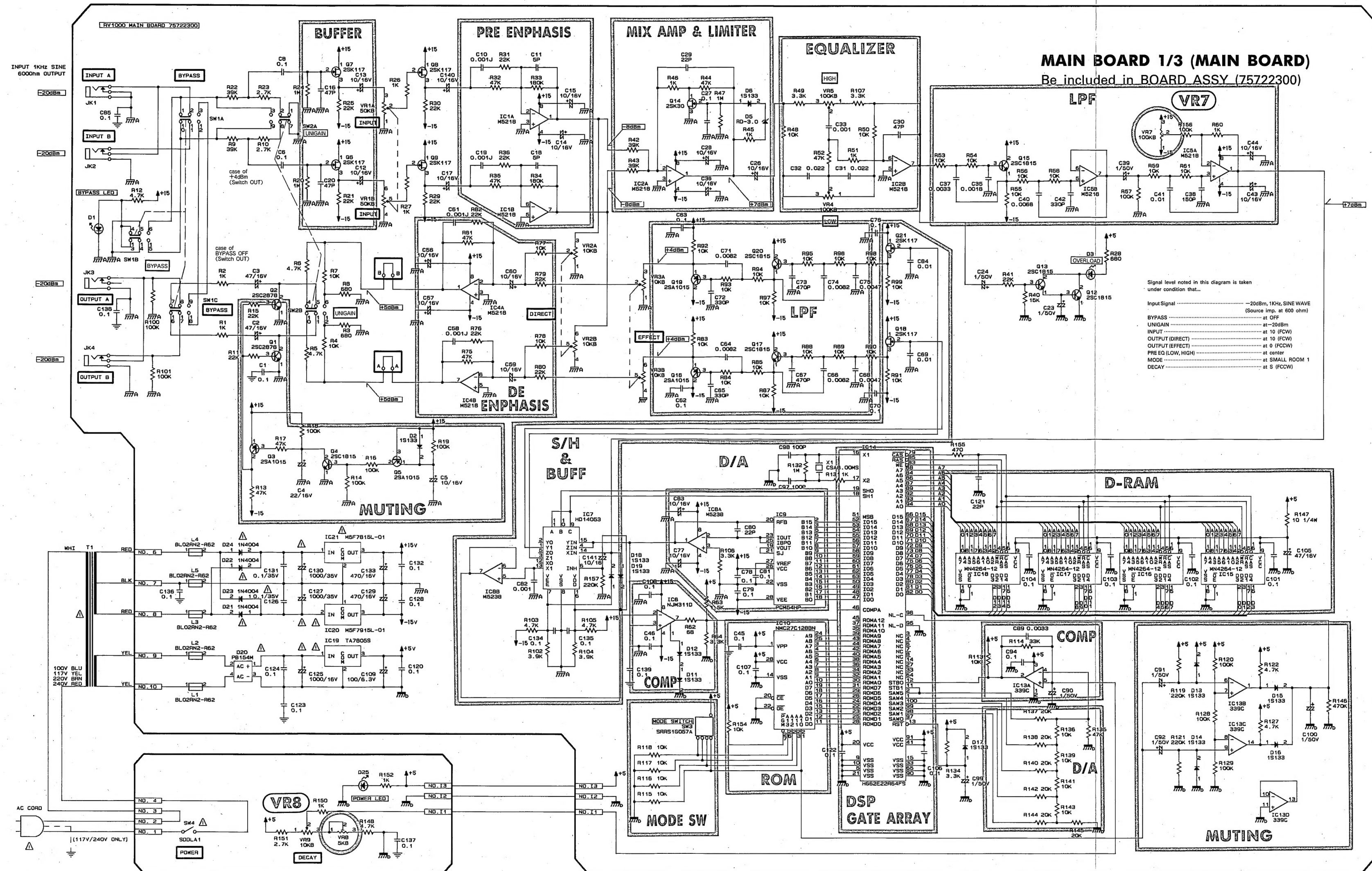


1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46

## CIRCUIT DIAGRAM/回路図

NOTES: The alphabet of A and B means the WIRING A and B for jumper lead.  
The alphabet of I at connecting point between BOARDs means the WIRING I to connect between BOARDs.

注: AとBの文字は、ジャンパー線の WIRING AとBを表わす。  
基板間の接続点にあるIの文字は、基板間を接続する為の WIRING Iを表わす。



## MAIN BOARD 3/3 (POWER BOARD)

Be included in BOARD ASSY (75722300)

100V	117V	220V	240V	240V
100V	117V	220V	240V	240V
100V	117V	220V	240V	240V
100V	117V	220V	240V	240V
100V	117V	220V	240V	240V

ADJUSTMENT/調整仕様

RV-1000

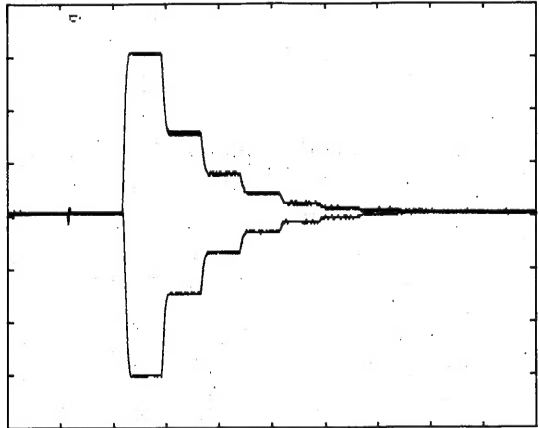
July, 1990

ADJUSTMENT

1. ADJUST THE OFFSET OF A/D

Adjuster : VR 7  
Observation Point : pin 15 of IC 7  
Setting of RV1000:  
INPUT 1/2 ..... do not connect anything  
MODE ..... SMALL ROOM 1  
DECAY ..... S (FCCW)  
Other knobs ..... do not care  
Setting of Oscilloscope:  
RANGE ..... 0.5V/div  
5uS/div (about)  
AC coupling

- 1-1. Connect an oscilloscope to pin 15 of IC 7 (COMMON Y of HD14053 MULTIPLEXER) on MAIN BOARD.
- 1-2. Observing the oscilloscope, adjust VR 7 so that the waveform becmes symmetrical with respect to horizontal line as shown below.



0.5V/div  
5uS/div  
(about)

調整仕様

1. A/D のオフセット調整  
調整箇所 : VR7  
観測点 : IC7 の15番ピン  
RV1000の設定:  
INPUT 1/2 .....何も接続しない  
MODE .....SMALL ROOM 1  
DECAY .....S (左端)  
その他のつまみ.....考慮せず  
オシロスコープの設定:  
RANGE .....0.5V/div  
約 5uS/div  
AC coupling

- 1-1: オシロスコープをメイン基板上の IC7 の15番ピン (HD14053 MULTIPLEXER の COMMON Y)に接続する。
- 1-2. 波形を観測しながら、下図のように波形が上下対称になるように VR7 を調整する。

2. ADJUST THE TIME OF DECAY

Adjuster : VR 8  
Setting of RV1000:  
INPUT A ..... connect an oscillator or sound source  
INPUT B ..... do not connect anything  
INPUT ..... suitable position for input signal level  
OUTPUT (DIRECT) ..... 0 (FCCW)  
OUTPUT (EFFECT) .... 10 (FCW)  
MODE ..... LARGE HALL 2  
DECAY ..... S (FCCW)  
OUTPUT A ..... connect an amplifier with speaker  
OUTPUT B ..... do not connect anything  
Other knobs ..... do not care

2-1. Connect an amplifier with speaker to OUTPUT A.

2-2. Apply a percussive sound to INPUT A jack.  
The percussive sound is obtained by the audio generator or musical instrument.  
Otherwise you apply a normal (continuous) sound to INPUT A jack and you push and pull the plug and so you can obtain the sound like percussive by manual operation.  
By the percussive sound, you can recognize the decay time easily.  
NOTES: Do not prescribe for input signal (percussive sound) level in particular, but you must set input signal to a suitable level (nominal level) by adjusting the INPUT controls.

2-3. Listening to the effect sound, adjust VR 8 so that the decay time becomes shortest.  
Then, the range of trim pot that the decay time becomes shortest is an angle of about 10 degrees.  
So, you must set it to the middle of it range.  
If set to the side of it range, time is unsettled because of trim pot data becomes borderline between next data.

2. DECAY 時間の調整  
調整箇所 : VR8

RV1000 の設定:  
INPUT A ..... 発振器または音源を接続  
INPUT B ..... 何も接続しない  
INPUT ..... 入力信号レベルに対する適正位置  
OUTPUT (DIRECT) 0(左端)  
OUTPUT (EFFECT) 10(右端)  
MODE ..... LARGE HALL 2  
DECAY ..... S (左端)  
OUTPUT A ..... スピーカ付アンプを接続  
OUTPUT B ..... 何も接続しない  
その他のつまみ .... 考慮しない

2-1. OUTPUT A にスピーカ付きアンプを接続する。

2-2. INPUT A ジャックに、パーカッシブ音を加える。パーカッシブ音は、発振器あるいは楽器によって得られる。あるいは、INPUT A ジャックに通常(連続)音を加え、そのプラグを抜き差しする事で、パーカッシブ音をマニュアル操作で得る事ができる。  
パーカッシブ音によって、ディケイ時間を容易に認識できる。

注: 入力信号(パーカッシブ音)レベルは特に規定しないが、INPUT つまみを調整して、入力信号を適正レベル(ノミナルレベル)に設定する。

2-3. エフェクト音を聞きながら、そのディケイ時間が最小となるように VR8 を調整する。その時、ディケイ時間が最小となる VR8 の範囲は、約10度の角度が有るので、その中程にセットする。  
もし、端にセットすると、トリマーの値が次の値との境目になるので、時間が不安定となる。



CHECK THE DIRECTION OF THE MODE SWITCHS KNOB  
MODE スイッチつまみの向きの確認

CHECK THE DIRECTION OF THE MODE SWITCHS KNOB

There is a regular direction to fix a knob to the MODE switch.  
The MODE switch is 16 position BCD rotary switch for 16 effect mode.  
Relation of MODE name and BCD output is shown below.  
The knob has a black line in the graphics to point the current MODE.

- 1. Connect an oscilloscope to pin21 of IC10 (A10 INPUT of NMC27C128BN PROM) on MAIN BOARD and measure it levels.  
While change the connect-position to pin23 (A11 INPUT), pin2 (A12 INPUT), pin26 (A13 INPUT) of same IC in turn, measure each levels.  
These levels are High (about 5V dc) or Low (about 0 V dc).
- 2. Look for matching code with these levels (A10, A11, A12, A13) from the following table for binary coding of switch.  
Left entry of the table is MODE name to correspond to 4 bits binary coding.  
MODE of the matching code is the current MODE.
- 3. Fix a knob to the MODE switch so that a black line on the knob direct to the same MODE name on the front panel as detected MODE name.

MODE スイッチつまみの向きの確認

MODE スイッチにつまみを取り付けるには、決まった向きがあります。  
MODE スイッチは、16種類の効果を切り替える為の、16ポジションのBCD ロータリースイッチです。  
MODE 名とBCD 出力との関係は下図に示します。  
つまみには、現行のMODE を指し示す為の、黒線が付いています。

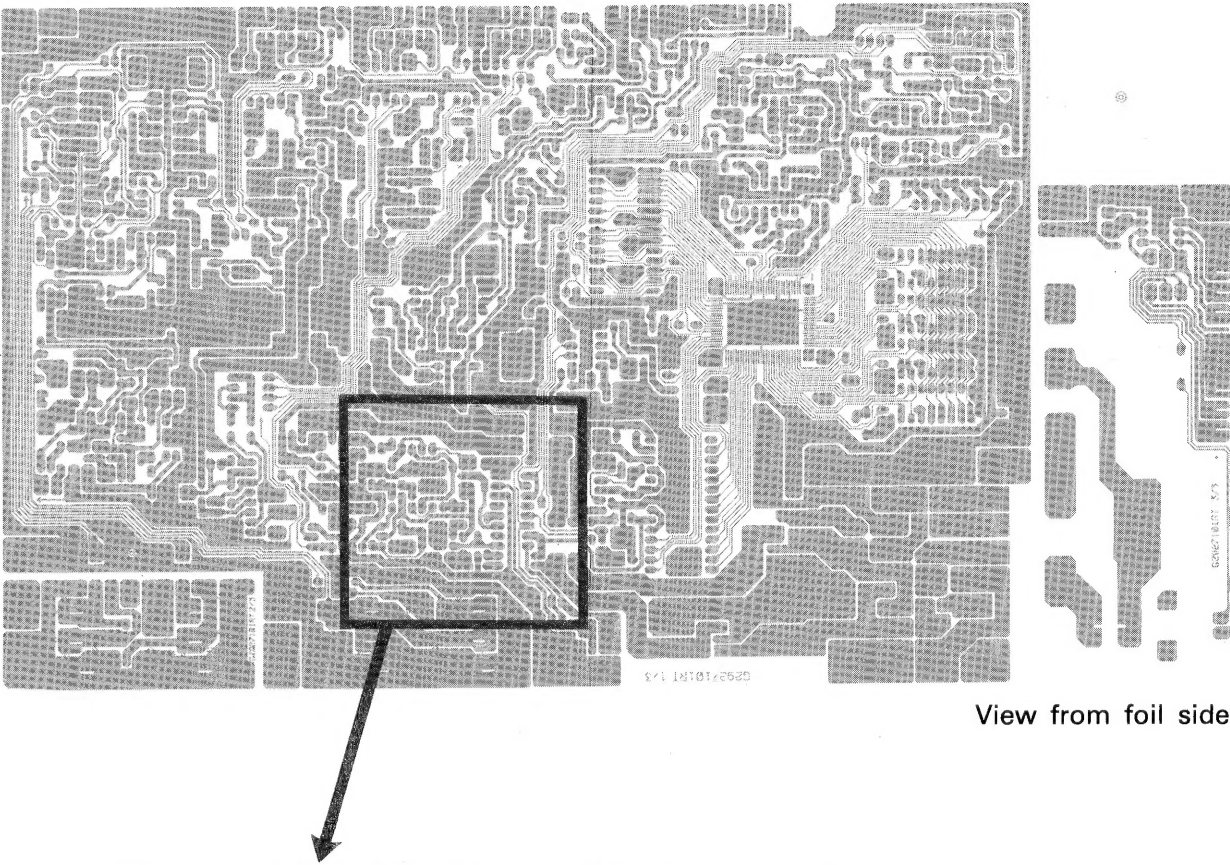
- 1. メイン基板上のIC10 の21番ピン(NMC27C 128BN PROM のA10 入力)にオシロスコープを接続し、そのレベルを測定する。  
接続点を同じIC の23番ピン(A11 入力)、2 番ピン(A12 入力)、26番ピン(A13 入力)と、順番に変えて行き、それぞれのレベルを測定する。  
これらのレベルは、High(約 5V)かLow(約 0V)です。
- 2. 下に示す、スイッチのバイナリーコーディング(2進コード化)の為の表から、これら(A10, A11, A12, A13)のレベルと一致するコードを探す。  
表の左側には、4 ビットの2進コードに応じたMODE 名が、記入されている。  
一致したコードのMODE が、現行MODE です。
- 3. つまみの黒線が、検出されたMODE 名と同じパネル上の名称を指すように、つまみをMODE スイッチに取り付ける。

BINARY CODING TABLE FOR MODE SWITCH  
(H=5V/L=0V DC)

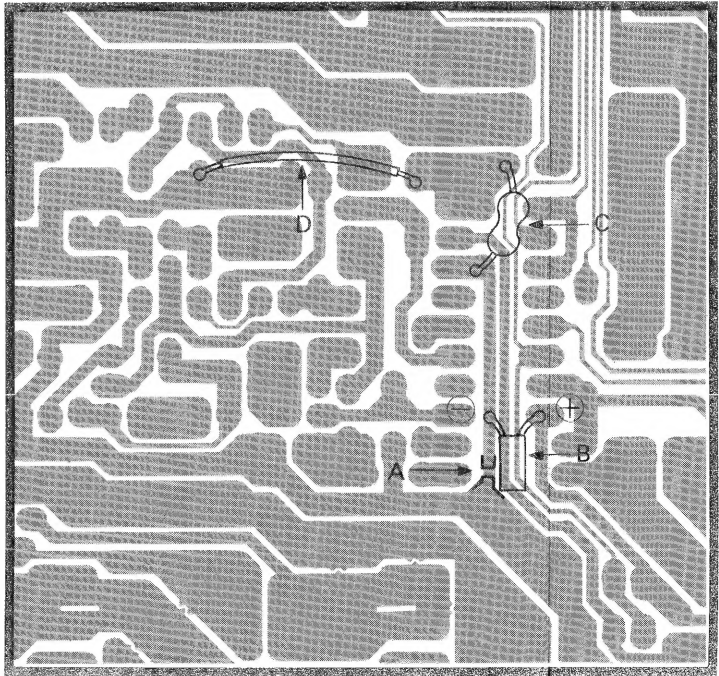
MODE/ROM PIN	A10(21)	A11(23)	A12(2)	A13(26)
SMALL ROOM1	L	L	L	L
SMALL ROOM2	H	L	L	L
MID ROOM1	L	H	L	L
MID ROOM2	H	H	L	L
MID HALL1	L	L	H	L
MID HALL2	H	L	H	L
LARGE HALL1	L	H	H	L
LARGE HALL2	H	H	H	L
CATHEDRAL	L	L	L	H
PLATE1	H	L	L	H
PLATE2	L	H	L	H
GATE REVERB1	H	H	L	H
GATE REVERB2	L	L	H	H
REVERSE GATE	H	L	H	H
DELAY1	L	H	H	H
DELAY2	H	H	H	H

SURFACE MOUNTING DIAGRAM FOR BOARD ASSY  
基板組立の裏付け説明図

In RV1000 BOARD ASSY, surface (foil side) mounting and pattern cut are made as shown below .



View from foil side



- A. Pattern cut x 1
- B. Capacitor C141 (10/16) x 1
- C. Resistor R157 (220Kohm) x 1
- D. Jumper Lead (WIRING L) x 1